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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/765,605      | 01/27/2004  | Bo Valdemar Vaaben   | 7784-000948         | 1393             |

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| EXAMINER |
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JOSEPH, TONYA S

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| ART UNIT | PAPER NUMBER |
|----------|--------------|

3628

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10/19/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/765,605 | <b>Applicant(s)</b><br>VAABEN ET AL. |  |
|                              | <b>Examiner</b><br>Tonya Joseph      | <b>Art Unit</b><br>3628              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 11-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____                                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> .                                  | 6) <input type="checkbox"/> Other: ____                           |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :07/26/2004, 07/08/2005, 08/24/2005.

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of Invention

I, Claims 1-10 in the reply filed on 08/20/2007 is acknowledged.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 1 recites the limitation, applying a first algorithm to each sub-problem without allowing the origin and destination of the objects in the subproblem for simplification". It is unclear whether varying the origin and destination is permitted so long as it is not for simplification or if it is not permitted at all. For Examination purposes, Examiner is interpreting, varying the origin and destination is permitted so long as it is not for simplification.

5. The term "quickly reaching initial solutions" in claim 1 is a relative term which renders the claim indefinite. The term " quickly reaching initial solutions " is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the

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scope of the invention. For Examination purposes, Examiner is interpreting a solution reached in any time frame as meeting the limitations of the claim.

6. Claims 2-10 contain the same deficiencies as claim 1 through dependency and as such, are rejected for the same reasons.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being unpatentable over Heuristic Procedures, (herein after Heuristic), Reference U of the attached PTO-892.

9. As per Claim 1, Heuristic teaches, receiving a disruption specification based upon an event (see para. 4 lines 1-3), the disruption specification including data identifying the objects to be rescheduled (see para. 4 lines 6-7); receiving a request for rescheduling of the objects from a user (see para. 5 lines 6-7 and para. 6 lines 1-3); grouping the objects to be rescheduled into subproblems (see para. 12 line 2), wherein each subproblem is defined by each object therein having the same original origin and destination (see para. 12 line 3 and para. 13 lines 3-4); applying a first algorithm to each subproblem without allowing varying the origin and destination of the objects in the subproblem for simplification and (see para. 15 & 16); identifying a subclass of objects that are unsuitably rescheduled in the initial solutions (see para. 22, Examiner is interpreting flights not in the “best flight sequence” to be a subclass of objects that are

unsuitably rescheduled; and applying a second algorithm for rescheduling the subclass (see para. 22 line 5). The steps of receiving and identifying are at least inherent in the reference steps as applied above. The limitation, "*in turn, quickly reaching initial solutions*" and "*that allows varying the original itinerary to generate rescheduling solutions for the subclass*" is merely a statement of intended result and as such is afforded little patentable weight.

10. As per Claim 2, Heuristic teaches the method of claim 1 as described above. Heuristic further teaches applying a third algorithm to an IP problem based upon all of the objects (see para. 23).

11. As per Claim 3, Heuristic teaches the method of claim 2 as described above. Heuristic further teaches wherein the third algorithm is an IP algorithm with a branch and bound technique (see para. 15-16 and 21).

12. As per Claim 4, Heuristic teaches the method of claim as described above. Heuristic further teaches excluding the subclass of objects from the objects that need to be rescheduled in the disruption specification and applying a fourth algorithm to the remaining objects in the reduced disruption specification to determine rescheduling solutions for the remaining objects (see para. 23, Examiner is interpreting the repetition of the OKF algorithm to include a fourth algorithm).

13. As per Claim 5, Heuristic teaches the method of claim 4 as described above. Heuristic further teaches wherein the first and fourth algorithms are transportation simplex algorithms (see para. 23).

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14. As per Claim 6, Heuristic teaches the method of claim 1 as described above.

Heuristic further teaches wherein the subclass of objects to be rerouted are identified based upon a suitably of rescheduling criteria (see para. 23).

15. As per Claim 7, Heuristic teaches the method of claim 6 as described above.

Heuristic further teaches wherein identifying the subclass includes determining a cost for each rescheduled object and comparing the cost to a threshold (see para. 13 & 15).

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heuristic Procedures, Reference U of the attached PTO-892 in view of Official Notice.

18. As per Claim 8, Heuristic teaches the method of claim 1 as described above.

Heuristic does not explicitly teach, wherein the objects are passengers traveling one or more legs between the origin and the destination. Official Notice is taken that the objects are passengers traveling one or more legs between the origin and the destination is old and well known. It would have been prima facie obvious to one of ordinary skill in the art at the time of invention to modify the method of Heuristic to include the teachings of Official Notice in order to provide an optimization solution for disrupted passengers.

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19. As per Claim 9, Heuristic teaches the method of claim 1 as described above.

Heuristic does not explicitly teach wherein the rescheduling solutions include upgrading, downgrading, delaying, and offloading the objects. Official Notice is taken that rescheduling solutions include upgrading, downgrading, delaying, and offloading the objects is old and well known. It would have been prima facie obvious to one of ordinary skill in the art at the time of invention to modify the method of Heuristic to include the teachings of Heuristic to provide an optimization solution to a disruption.

20. As per Claim 10, Heuristic teaches the method of claim 1 as described above.

Heuristic does not explicitly teach wherein the second algorithm is selected from the group consisting of the Dijkstra algorithm and a K-shortest path algorithm. Official Notice is taken that using a Dijkstra or K-shortest path algorithm is old and well known. It would have been prima facie obvious to one of ordinary skill in the art at the time of invention to modify the method of Heuristic to include the teachings of Official Notice in order to alter the results of an optimization equation.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tonya Joseph whose telephone number is 571-270-1361. The examiner can normally be reached on Mon-Fri 7:30am-5:00pm First Fridays off.

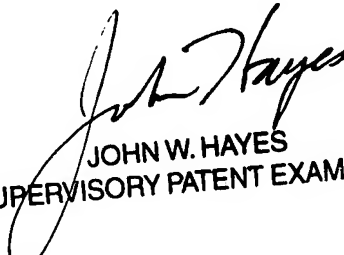
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Hayes can be reached on 571 272 0847. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tonya Joseph  
Examiner  
Art Unit 3628



JOHN W. HAYES  
SUPERVISORY PATENT EXAMINER